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WATER QUALITY STANDARDS DIGEST

A COMPILATION OF FEDERAL/ STATE STANDARDS ON

SECONDARY TREATMENT REQUIREMENTS

ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

AUGUST 1972

INTRODUCTION

This digest was compiled in order to provide general information to the public as well as to Federal, State, and local officials. It contains excerpts from the individual Federal-State water quality standards relating to the level of treatment required for municipal and industrial waste discharges to interstate waters. The water quality standards program is directed by the Environmental Protection Agency, an independent regulatory agency which has responsibility for approving State-adopted standards for interstate waters, evaluating adherence to the standards, and overseeing enforcement of standards compliance.

Standards, the first nationwide strategy for water quality management, contain four major elements: the use (recreation, drinking water, fish and wildlife propagation, industrial, or agricultural) to be made for the interstate water; criteria to protect those uses; implementation plans (for needed industrial-municipal waste treatment improvements, among others) and enforcement plans; and an antidegradation statement to protect existing high quality waters.

Minimum water quality criteria, or numerical specifications of physical, chemical, temperature, and biological levels, are stated in the National Technical Advisory Committee report to the Secretary of the Interior, Water Quality Criteria, dated April 1, 1968, and published by the Government Printing Office, Washington, D.C. Unavailability of the NTAC report before June 30, 1967--the date set by the Water Quality Act of 1965 for formal adoption of State standards--resulted in significant variations between the state-adopted and the NTAC minimum criteria. Some standards were adopted and approved before the NTAC report became available. Also, the Water Quality Criteria report is subject to updating in light of new scientific and technical information.

Most states require secondary treatment for municipal wastes or its industrial equivalent. This is generally defined as 85% reduction in the 5-day biochemical oxygen demand. Many times the applicable state definition is found in state administrative documents, laws, regulations, etc. other than the water quality standards. Most states also have an approved antidegradation statement which generally requires the application of the highest and best degree of waste treatment available under existing technology.

Since water quality standards are revised from time to time, following procedures set forth in the Federal Water Pollution Control Act, individual entries in this digest may be superseded. As these revisions are accomplished, this digest will be updated and reissued. Because this publication is not intended for use other than as a general information resource, for the latest information, and for special purposes and applications, refer to the existing approved water quality standards which can be obtained from the State water pollution control agencies or EPA Washington, D.C. or regional offices.

ALABAMA

Domestic Requirement

SEWAGE:

1. All sewage discharged to waters of the state used as sources of public water supply, used for the harvesting of oysters or customarily used by the public for swimming and other whole body water-contact activities shall receive a minimum of secondary treatment and, if necessary, disinfection.

2. All sewage discharged to waters of the state used for purposes other then as sources of public water supply, swimming and other whole body water-contact activities shall receive a minimum of secondary treatment except those discharges of sewage which, on the effective date of these criteria, are receiving less than secondary treatment under a valid permit from the Commission and which discharge does not contravene water quality standards adopted and promulgated by the Commission. Such discharges of sewage as excluded herein shall receive a minimum of secondary treatment at such time as plants existing at the time of exclusion must be enlarged or become inadequate for any reason.

DEFINITION:

. . . "secondary treatment" of sewage means a process . . . capable of removing virtually all floating and settleable solids, from 75 to 95 per cent of the 5-day biochemical oxygen demand and in excess of 75 per cent of suspended solid contained in untreated sewage.

Industrial Requirements

INDUSTRIAL WASTES:

1. All industrial wastes likely to contain bacteria harmful to humans shall receive a minimum of secondary treatment or the equivalent thereof and, if necessary, disinfection before being discharged to waters of the state used as sources of public water supply, used for the harvesting of oysters or customarily used by the public for swimming and other whole body water-contact sports.

2. All industrial wastes discharged to any waters of the state shall receive a minimum of secondary treatment or the equivalent thereof except those discharges of industrial waste which, on the effective date of these criteria, are receiving less than secondary treatment or the equivalent thereof under a valid permit from the Commission and which discharges do not contravene water quality standards adopted and promulgated by the Commission. Such discharges of industrial wastes herein excluded shall receive a minimum of secondary treatment or the equivalent thereof at such time as plants existing at the time of exclusion must be enlarged or become inadequate for any reason.

DEFINITION:

. . . "Secondary treatment" of industrial waste means a process . . . capable of removing virtually all floating and settleable solids and reduction of 5-day biochemical oxygen and suspended solids to the maximum extent possible within limits of praticability and technology but not less than 75 per cent.

For industrial waste in which biochemical oxygen demand and suspended solids are not involved, objectionable constituents shall be controlled, removed or reduced to the maximum degree attainable within the limits of practicability and technology.

. . . "equivalent of secondary treatment" means control and restriction, generally through in-plant measures or storage and regulation of discharge, of waste constituents . . . to a degree comparable to . . . applicable secondary treatment processes.

ALASKA

Requirement

Secondary treatment is required for all industrial and municipal waste unless engineering studies approved by the Department of Environmental Conservation, and where interstate waters are affected, concurred in by the Environmental Protection Agency, show that the water quality standards can be met with primary treatment. Primary treatment is the minimum acceptable treatment. Disinfection will be required where necessary.

Definition:

The removal of dissolved and colloidal materials that in their unaltered state, are not amenable to separation through the application of mechanical means and/or gravitational forces. Secondary treatment is generally accomplished through unit processes such as bio-absorption, biological oxidation, wet combustion, other chemical reactions, and absorption on surfaceactive media, change of phase, or other processes . . . of removal of colloidal and dissolved solids . . . . Disinfection will be required where necessary.

ARIZONA

Requirement

. . . policy requires the maximum practical degree of treatment for all waste sources under the jurisdiction of the Board. For domestic wastes this shall be secondary treatment, its equivalent or better, and effluent chlorination or disinfection where these wastes contain pathogenic organisms . . . . Industrial wastes containing dissolved or suspended organic material must receive treatment resulting in an effluent comparable to domestic wastes for discharge at that point.

For industrial wastes containing inorganic suspended solids, primary treatment, its equivalent or better, will be required. Other methods and degree of treatment will be required, as appropriate, to remove toxicants, nutrients, oily constituent and other polluting materials from wastes before discharge.

DEFINITION:

No specific definition incorporated into the standards.

ARKANSAS

REQUIREMENT

. . . treatment or control must be consistent with the state of the art and best practicable industry standards, the minimum requirement being secondary treatment or equivalent, giving due regard to the quality and flow of the receiving waters; the present, future and potential uses of such waters; economic feasibility; and other relevant factors.

DEFINITION:

The removal of practically all suspended solids and the reduction of the biochemical oxygen demand by at least eighty-five (85) per cent, and may include the in-plant control of industrial wastes as prescribed by the Arkansas Pollution Control Commission.

CALIFORNIA

REQUIREMENT:

Statewide policy does not specifically require "secondary treatment."

Establishment and enforcement of waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the state is maintained.

COLORADO

REQUIREMENT:

All wastes capable of treatment or control prior to discharge into any waters of the state, shall receive secondary treatment with disinfection or its industrial waste equivalent, as determined by the State Water Pollution Control Commission. Lesser degrees of treatment or control may be permitted only where it can be demonstrated that the standards applicable to the classified use of the water can be attained. Greater degrees of treatment or control will be required where it can be demonstrated that it is necessary to comply with the standards applicable to the classified use of the water.

DEFINITION:

A method of treatment in which a minimum of 80% of the biochemical oxygen consuming material is removed.

CONNECTICUT

REQUIREMENT

The actions of the Connecticut Water Resources Commission under this Public Act (57 of the 1967 Session) will be aimed at eliminating all sources of pollution through the installation of secondary treatment of the activated sludge type or its equivalent except in cases where a higher degree of treatment will be required to maintain the water quality standards adopted.

DEFINITION:

No specific definition incorporated into the standards.

DELAWARE

REQUIREMENT & DEFINITION:

All new waste discharges shall receive a minimum of secondary treatment (at least 85 per cent removal of 5-day biochemical oxygen demand) or equivalent. All existing waste discharges which do not receive secondary treatment or equivalent shall be upgraded with some exceptions. These exceptions are recognized only when all reasonable water uses and all the water quality criteria are satisfied with less than secondary treatment.

FLORIDA

REQUIREMENTS & DEFINITION:

Any industrial wastes or other wastes shall be effectively treated by the latest modern technological advances as approved by the regulatory agency.

All discharges from municipal and privately owned domestic waste plants will comply with the Water Quality Standards of the State of Florida with 90% treatment or better as expeditiously as possible, but not later than January 1, 1973.

The degree of treatment for industrial waste has been further defined as follows: That which provides an effluent equivalent to that produced by the highest quality municipal waste treatment, but in no case shall the efficiency be less than 10% organic removal. In some cases, due to waste characteristics, it will be necessary that the efficiency exceed 9(In the case of inorganic wastes, waste treatment shall have similar efficiencies. The 90% organic and inorganic removal factor shall be applied against the total untreated waste produced by a given plant. All discharges from industrial waste treatment plants shall attain such treatment efficiency as expeditiously as possible, but not later than January 1, 1973.

Sanitary sewage disposal treatment plants which discharge effluent through ocean outfalls or disposal wells on the effective date of this act shall provide for secondary waste treatment and in addition thereto, advanced waste treatment as deemed necessary and ordered by the department of air and water pollution control by January 3, 1974.

GEORGIA

REQUIREMENT:

The basic requirement of all wastes under the rules of the State Water Quality Control Board is secondary (biological) treatment with disinfection where necessary for domestic sewage and equivalent treatment for industrial waste. It will apply also to all other discharges of inadequately treated wastes.

DEFINITION:

. . . secondary treatment refers to biological stabilization of sewage to obtain 85 to 95 per cent BOD reduction. Industrial wastes not amenable to conventional biological treatment methods must receive treatment or control necessary to produce an effluent equal or superior to that produced from a well-operated biological (secondary) sewage treatment plant.

HAWAII

REQUIREMENT:

All municipal and industrial waste sewage discharges will be upgraded to the best practicable level as rapidly as funds can be found and capabilities of engineering and construction permit.

It will be a firm requirement on the discharge of all wastes into receiving waters of the State that said wastes receive the best practicable treatment or control unless it can be demonstrated that a lesser degree of treatment or control will provide for water quality enhancement commensurate with the present and future uses for which the waters have been classified. This policy will make maximum the equitable uses which can be made of a water.

The following change was made in the table titled "Estimate of Discharge - Water" . . . .

(1) All items . . . requiring treatment have been changed to "Secondary Treatment."

IDAHO

REQUIREMENTS:

Secondary treatment with disinfection or the equivalent will be required for all new domestic waste discharges. Secondary treatment or the equivalent will be required of all new industrial waste discharges.

It shall be the policy of the State Board of Health that, notwithstanding the water quality standards contained herein, where a higher standards can be achieved, the highest and best practicable treatment and/or control of wastes, activities and flows shall be provided so as to maintain dissolved oxygen at the highest desirable levels and overall water quality as good as possible, and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor and other deleterious factors at the lowest desirable levels. Such policy to apply not only to existing waste sources but to future waste sources as they may develop and for such other interstate streams not listed herein.

DEFINITION:

(Not legally approved for interstate waters, but generally applicable.)

...85% removal of BOD with disinfection...

ILLINOIS

REQUIREMENTS:

All municipal or industrial facilities for treatment of deoxygenating waste shall provide at least secondary biological treatment, or advanced waste treatment, adequate to reduce the organic pollution load of the treatment works effluent at the final treatment structure in accordance with effluent guidelines in paragraph 11. . . . (Implementation and Enforcement Plan #10).

DEFINITIONS:

Secondary treatment provides for the removal of dissolved and colloidal materials that in their unaltered state, as found in waste water, are not amenable to separation through the application of mechanical means and/or gravitational forces. This is generally a biological process and will reduce the five-day BOD at least 85% and suspended solids at least 80%. . . .

INDIANA

REQUIREMENT:

Municipalities with population over 2,000 with only primary wastewater treatment plants (not now on notice for addition of secondary) will be required to provide secondary treatment facilities when additions or alterations are made to existing primary plants or not later than the end of 1973, whichever occurs first. Municipalities under 2,000 population required to install secondary treatment facilities when existing primary facilities are altered or added to, but not later than 1975.

All industries will be required to provide a degree of treatment or control that is equivalent to that required of municipalities on the same stretch of the stream. Except in rare instances this will be the equivalent, at least, of secondary treatment. Exceptions must be justified to the satisfaction of the Indiana Stream Pollution Control Board and the Federal Water Pollution Control Administration.

DEFINITION:

All those municipalities which have or will be required to have, secondary sewage treatment facilities must provide the following removal of organic material in terms of BOD: trickling filter plant - at least 80%, activated sludge plant - at least 90%

REQUIREMENT AND DEFINITION:

Treatment less than secondary will not be accepted on low flow streams unless it can be shown that legitimate uses can be protected with a lesser degree of treatment.

All industries will be required to provide the same degree of treatment or control that is required of municipalities on the same reach of the stream. This degree of treatment will generally be the equivalent of secondary treatment. *

Secondary treatment of all biodegradable wastes and an equivalent high degree of treatment for all other wastes is required as the minimum for all interstate waters. . . .

All municipal wastes discharged into the interstate waters of the Mississippi River and the Missouri River shall receive a minimum of secondary treatment to achieve a ninety per cent (90%) reduction of BOD prior to discharge no later than December 31, 1973. All industrial wastes discharged into such interstate waters shall receive equivalent treatment prior to discharge no later than December 31, 1973.

All municipalities on interior streams will generally need secondary treatment . . .

* Table 11 also presents the best estimate of treatment needs. All municipalities on interior streams will generally need secondary treatment . . . .

KANSAS

REQUIREMENT:

All municipal wastes discharged within the Neosho River Basin shall receive a minimum of secondary treatment to achieve a minimum of 85 per cent reduction of the five-day biochemical oxygen demand by December 31, 1975. All industrial wastes discharged within the Neosho River Basin will receive an equivalent treatment by December 31, 1975.

The same requirement applies to the following river basin: Verdigris . . . Little Arkansas . . . Lower Arkansas . . . Upper Arkansas . . . Walnut . . . Cimarron . . . Smoky Hill . . . Upper Republican . . . Solomon . . . Lower Republican . . . Big Blue . . . Missouri . . . Kansas . . . Marais des Cynges . . . Saline River Basin (s).

DEFINITION:

That treatment necessary to achieve a minimum of 85 per cent reduction of the five-day biochemical oxygen demand . . . .

KENTUCKY

REQUIREMENT:

All municipalities will provide secondary waste treatment at the earliest possible date and no later than December 31, 1975.

Any industry which produces waste having a predominate BOD characteristic will provide treatment sufficient to reduce the BOD by at least 85 per cent on a consistent year round basis. Higher levels of treatment will be dictated in those instances necessary to achieve the Water Quality Standards Stream Use Classification.

The facilities will be constructed as soon as practical, but in no case later than December 31, 1975, and an Implementation Schedule will be prepared as part of the Water Quality Standards. (Adopted 10/9/70 by Water Pollution Control Commission.)

DEFINITION:

Secondary waste treatment should be considered a minimum of 85 per cent removal of BOD on a year-round basis. In any determination of "Secondary Treatment" cognizance will be given to regulation of the Department of Interior issued on June 10, 1970.

LOUISIANA

REQUIREMENT:

Domestic Waste:

Secondary treatment will be the minimum degree of treatment accepted.

Industrial Wastes:

The Louisiana Stream Control Commission prescribes that all such wastes will receive the best practicable treatment, secondary or its equivalent, at all times, not later than end of the calendar year 1972.

DEFINITION:

No specific definition incorporated into the standards.

MAINE

REQUIREMENT:

> . . . well require secondary treatment or its equivalent as minimum treatment for all fresh waters. In general, this policy will also be applied to coastal waters except those cases where it can be demonstrated that a lesser degree of treatment or control will provide for water quality enhancement commensurate with proposed present and future uses.

DEFINITION:

> Secondary treatment shall mean such treatment that a minimum of 75 per cent removal of 5-day 20° C, BOD is obtained. In order to obtain this percentage removal as an operational fact, treatment facilities shall be designed to obtain a minimum of 85 per cent BOD removal (5-day, 20°C).

REQUIREMENT & DEFINITION:

Maryland will require as minimum treatment that municipal sewage receive secondary treatment, meaning a reduction of biochemical oxygen demand (5-day, 20°C) of 85% minimum, and equivalent treatment for industrial waste.

MASSACHUSETTS

REQUIREMENT & DEFINITION:

All waste sources on fresh waters will be required to be treated to the secondary level regardless of the stream classification assigned (except when a higher degree of treatment is required to meet the WQS). Secondary treatment will generally refer to biological treatment as applicable and/or its industrial waste treatment equivalent, all as determined by the Division of Water Pollution Control. Secondary treatment efficiencies shall range from 80% to 95% BOD removal with correspondingly similar removals on other waste parameters. On coastal and marine waters the degree of treatment required will be that which will attain the particular classification set on the area waters.

MICHIGAN

REQUIREMENT:

Secondary treatment will be required as a minimum at all municipal wastewater treatment plants to meet the adopted water quality standards unless it can be demonstrated that a lesser degree of treatment or control will provide for water quality enhancement commensurate with proposed present and future water use.

. . . industrial waste effluent will be required to meet the same effluent standards as municipal waste effluents.

Exception to the requirement for at least secondary treatment must be justified to the satisfaction of the Michigan Water Resources Commission and the Federal Water Pollution Control Administration.

DEFINITION:

No specific definition incorporated into the standards.

MINNESOTA

REQUIREMENT:

It is herin established that the Minnesota Pollution Control Agency will require secondary treatment or the equivalent as a minimum for all municipal sewage and biodegradable industrial or other wastes to meet the adopted water quality standards.

DEFINITION:

Secondary treatment facilities are defined as works which will provide effective sedimentation, biochemical oxidation, and disinfection, or the equivalent, including effluents conforming to the following:

Substance or Characteristic	Limiting Concentration or Range
5-day biochemical oxygen demand	25 milligrams per liter
Total coliform group organisms	1,000 MRN/100 ml
Total suspended solids	30 milligrams per liter
Oil	Trace
Turbidity	25
pH range	6.5 - 8.5

MISSISSIPPI

REQUIREMENT:

Municipal wastes, industrial wastes, or other wastes shall receive effective treatment or control (secondary or equivalent) in accordance with the latest practical technological advances and shall be approved by the Commission. A degree of treatment greater than secondary will be required when necessary to protect legitimate water uses.

DEFINITION:

85% reduction of BOD and suspended solids.

MISSOURI

REQUIREMENT:

. . . the Missouri Water Pollution Board will require secondary treatment of all municipal wastes and the equivalent of secondary treatment of all industrial waste.

DEFINITION:

No specific definition incorporated into the standards.

REQUIREMENT:

Domestic:

--the minimum treatment required for domestic sewage shall be secondary treatment or its equivalent with the understanding that properly designed and operated sewage lagoons will meet this requirement.

Industrial:

the minimum treatment required for industrial wastes shall be secondary treatment or its equivalent.

DEFINITION:

(It) may be defined as that process or group of processes capable of removing virtually all floating and settleable solids, generally from 80 to 95 per cent of the five-day biochemical oxygen demand, and a similar level of removal of suspended solids in untreated waste. The equivalent treatment (is) . . . maximum practicable removal of solids, oils, grease, acids, alkalis, toxic materials, bacteria, taste and odor-causing materials, color and any other objectionable constituents . . . of industrial waste. (Properly designed and operated sewage lagoons are acceptable secondary treatment facilities for domestic wastes.)

NEBRASKA

REQUIREMENT:

All municipal wastes shall receive at least secondary treatment plus such additional treatment as is required to maintain Water Quality Criteria, as set forth in these standards. All other wastes shall receive an equivalent degree of treatment or control consistent with waste characteristics, uses and quality of receiving waters.

DEFINITION:

Secondary treatment . . . a method of waste treatment beyond primary treatment where pollutants in solution or the colloidal state are biologically or chemically removed. The minimum treatment required under this method is removal of at least 85% of the BOD and suspended solids.

NEVADA

REQUIREMENT:

"A minimum of secondary treatment or its industrial equivalent is required for all municipal and industrial wastes."

DEFINITION:

No specific definition incorporated into the standards

NEW HAMPSHIRE

REQUIREMENT:

> . . . all communities in this State are required by law to install secondary sewage treatment. This is a firm commitment by the New Hampshire legislature.
>
> Insofar as practicable, the initial objective of the control program will be to obtain the installation of primary treatment (with adequate disinfection where sewage discharges are involved) for all discharges of sewage and industrial wastes.
>
> The second objective will be to require the installation of secondar treatment whenever such additional treatment is necessary to protect the use assigned to the particular stream classification.

DEFINITION:

> (Secondary treatment defined as 80-85% removal of BOD.)

NEW JERSEY

REQUIREMENT:

The minimum degree of wastewater treatment now being permitted in the State of New Jersey is that commonly identified as secondary treatment.

DEFINITION:

In New Jersey this means treatment necessary to provide as an absolute minimum 80% reduction of biochemical oxygen demand and a maximum permissible biochemical oxygen demand concentration of 50 parts per million. In most areas in New Jersey, this standard is raised to require biochemical oxygen demand reduction of 85% and 90% with appropriate maximum permissible biochemical oxygen demand concentrations.

NEW MEXICO

REQUIREMENT:

All municipal treatment plants have secondary treatment in New Mexico. All industrial wastes are to receive the equivalent of secondary treatment or control by 1972.

DEFINITION:

Commonly defined as that process or group of processes capable of removing vertually all floating and setteable solids, generally from 80-95% of the 5-day biochemical oxygen demand, and a similar level of removal of suspended solids.

NEW YORK

REQUIREMENT:

Outlets to water classified "A" shall be preceded by secondary treatment and continuous chlorination.

Outlets into water classified "B" shall be preceded by secondary treatment and seasonal chlorination from May 1 through October 1 of each year.

Outlets to waters classified "C" shall be preceded by secondary treatment.

DEFINITION:

(Secondary Treatment) . . . shall mean a process or group of processes removing or capable of removing virtually all (i.e., greater than 95%) floatable and settleable solids in a raw waste and accomplish removals of Biochemical Oxygen Demand (5 day, 20^{o}C.) and Suspended Solids in the range of 75%-95%.

NORTH CAROLINA

REQUIREMENT:

In the interest of maintaining and enhancing water quality, secondary treatment or equally effective treatment and control shall be considered the minimum acceptable abatement action for all significant sources of sewage, industrial waste or other waste regardless of the assigned classification and applicable water quality standards, unless it can be demonstrated that the quality of the receiving waters will be maintained and enhanced by a lesser degree of treatment or control. Advanced waste treatment processes shall be required insofar as practicable in instances where a higher degree of treatment is required to maintain the assigned water quality standards.

DEFINITION:

No specific definition incorporated into the standards.

REQUIREMENT:

Secondary treatment or equivalent will be required for all municipal and industrial wastes discharging directly to, or which will adversely affect, all interstate streams. It is noted that the listing of treatment needs on the enforcement plan portion of the Standards lists "new plant", "expansion" etc. It is the intention that these required facilities be secondary treatment or equivalent. The dates of compliance are as listed. If the water quality monitoring program data provide evidence that any municipal or industrial treatment plant presently not included under "treatment needs" nor is discharging directly to interstate waters, is adversely affecting the quality of interstate waters, such plant will be required to provide secondary treatment or equivalent treatment of its wastes by July 1, 1972.

DEFINITION:

Standard waste stabilization lagoons, properly designed and operated, are considered by this Department to be equivalent to secondary treatment.

No specific definition incorporated into the standards.

OHIO

REQUIREMENT & DEFINITION:

(Different statements for different interstate waters are found in the standards:)

(For) Ohio-Pennsylvania interstate waters of the Mahoning River, Pymatuning and Yankee Creeks, and Little Beaver Creek: All sewage and organic industrial wastes will be treated to reduce the oxygen-demanding materials in the untreated waste waters by not less than seventy-five per cent (75%) . . .

(For) Great Miami, Whitewater, and Wabash River Basins, Maumec, Tiffin, St. Joseph, and St. Marys River Basins: All sewage will be given secondary treatment (biochemical oxidation) . . .

All organic industrial wastes will be given secondary treatment and other constituents will be adequately treated to meet the water quality conditions and criteria . . .

(For) Interstate waters of the Ohio River between Ohio-West Virginia, and Ohio-Kentucky and Aschtabula River, Conneaut Creek, and Turkey Creek, including interstate waters of Ohio-Pennsylvania: All sewage and organic industrial wastes will be given secondary treatment (biochemical oxidation) . . .

(For) Lake Erie: All sewage will be given secondary treatment (biochemical oxidation) . . .

OKLAHOMA

REQUIREMENT:

The following policy was adopted by the Oklahoma State Board of Health:

. . . That all wastes discharged to the waters of the State receive the equivalent of secondary treatment prior to being discharged, and that action be taken by the State Department of Health to secure the orderly achievement of this objective for all wastes under its jurisdiction. The minimum degree of treatment or control for industrial waste is defined as the equivalent to municipal secondary treatment.

DEFINITION:

No specific definition incorporated into the standards.

OREGON

REQUIREMENT & DEFINITION:

All sewage shall receive a minimum of secondary treatment or equivalent (equal to at least 85% removal of 5-day biochemical oxygen demand and suspended solids) and shall be effectively disinfected before being discharged into any public waters of the state.

PENNSYLVANIA

REQUIREMENT:

As a matter of common decency, all biodegradable wastes shall be given a minimum of secondary treatment or its equivalent for industrial wastes except as hereinafter specified.

An equivalent of secondary treatment is required for non-biodegradable wastes.

DEFINITION:

Secondary treatment is that treatment that will reduce the organic waste load as measured by the biochemical oxygen demand test by at least 85% during the period May 1 to October 31 and by at least 75% during the remainder of the year based on a five consecutive day average of values; will remove practically all of the suspended solids; willl provide satisfactory disposal of sludge; and will reduce the quantities of oil, greases, acids, alkalis, toxic, taste, and odor producing substances, color, and other substances inimical to the public interest to levels that will not pollute the receiving stream.

RHODE ISLAND

REQUIREMENT:

Appropriate waste treatment shall be secondary treatment with disinfection or the equivalent. Lesser degrees of treatment will be permitted only where it can be demonstrated that attainment of the specified water use class standards of quality can be effectuated.

DEFINITION:

Secondary treatment includes biological treatment employing either some form of the activated sludge process, trickling filters, or other means providing a removal of about ninety per cent of the BOD and suspended solids.

SOUTH CAROLINA

REQUIREMENT:

No wastes amenable to treatment or control shall be discharged into any State waters without treatment or control. All biodegradable waste, prior to discharge into any State waters, shall receive a minimum of secondary treatment and all other wastes an equivalent degree of treatment unless it can be demonstrated that a lesser degree of treatment or control will provide for water quality improvement consistent with present and anticipated future water uses.

DEFINITION:

(Secondary treatment means) 85% BOD removal.

SOUTH DAKOTA

REQUIREMENT:

Adequate waste treatment of municipal and industrial wastes discharged to interstate waters is secondary treatment or better.

DEFINITION:

"The effluent quality requirement to be used for design purposes for all communities and industries, unless a higher degree of treatment will be required to meet the criteria adopted by the Committee, is as follows:

a. The five-day biochemical oxygen demand (BOD) shall not exceed 30 mg/l on a daily average and the biochemical oxygen demand shall not exceed 60 mg/l at any one time

b. Suspended solids concentrations shall not exceed 30 mg/l based on a daily average and the suspended solids concentration shall not exceed 60 mg/l at any one time."

TENNESSEE

REQUIREMENT:

The criteria and standards provide that all discharges of sewage, industrial waste, and other wastes will receive the best practicable treatment (secondary or the equivalent) or control according to the policy and procedure of the Tennessee Stream Pollution Control Board. A degree of treatment greater than secondary when necessary to protect the water uses will be required for selected sewage and waste discharges.

DEFINITION:

Secondary treatment will provide from 75 to 90 percent 5-day BOD removal and from 80 to 90 per cent suspended solids removal.

TEXAS

REQUIREMENT:

It is the policy of the State of Texas, acting through the Texas Water Quality Board, to require primary and secondary treatment and disinfection (except for oxidation pond effluents) at all facilities serving the general public and which treat domestic sanitary wastes. Treatment or control of industrial wastes is equally as important as the treatment or control of municipal (domestic) wastes. It is the policy of the Texas Water Quality Board to require a comparably high standard of treatment or control of industrial wastes being discharged to the waters in the State. Therefore, anyone making a waste discharge from any industrial, public or private project or development which would constitute a new source of pollution to any of the waters in the State will be required, as part of the initial project desing, to provide the highest and best degree of waste treatment available under existing technology consistent with the best practice in the particular field affected under the conditions applicable to the project or development.

DEFINITION:

No specific definition incorporated into the standards.

UTAH

REQUIREMENT:

The following standards of quality shall be applied to waste discharge ... except that no waste of any kind shall be discharged from controlled areas until subjected to at least secondary treatment.

DEFINITION:

No specific definition incorporated into the standards.

VERMONT

REQUIREMENT:

Appropriate treatment shall be defined as secondary treatment with disinfection or its industrial waste equivalent as determined by the signatory state regulatory agency (Vermont Department of Water Resources). Lesser degrees of treatment or control will be permitted only where it can be demonstrated that attainment of the specified water use class criteria of quality can be effectuated.

DEFINITION:

No specific definition incorporated into the standards.

VIRGINIA

REQUIREMENT:

The State Water Control Board will require that, prior to discharge to interstate waters, all bio-degradable wastes will receive a minimum of secondary treatment; and other wastes will receive an equivalent high degree of treatment unless it can be demonstrated that a lesser degree of treatment or control will provide for water quality enhancement commensurate with proposed present and future water uses.

DEFINITION:

No specific definition incorporated into the standards.

WASHINGTON

REQUIREMENT:

Existing and new domestic waste dischargers shall provide adequate secondary sewage treatment, disinfection and outfall facilities. Existing and new commercial and industrial operations discharging an organic waste shall connect to a municipal system when at all possible. If connection is not feasible, adequate secondary treatment and outfall shall be provided.

Existing and new commercial and industrial operations discharging an inorganic waste shall connect to a municipal system if at all possible. If connection is not feasible, coagulation and sedimentation chemical treatment, or other necessary treatment and adequate outfall shall be provided.

Where existing and new commercial, industrial or domestic wastes discharge to salt water, secondary treatment shall be required unless, after a review of existing data or an engineering study, it can be demonstrated that a lesser degree of treatment will provide for protection of present and future water uses and the preservation or enhancement of existing water quality. In no case, however, will less than primary treatment together with disinfection and adequate outfall be accepted.

DEFINITION:

(not officially adopted for interstate waters, but in general use) . . . the removal of settleable and floatable solids from the waste flow and the application of additional waste treatment processes to attain 85% removal of the BOD and 90% removal of suspended solids with adequate disenfection of the effluent.

WEST VIRGINIA

DEFINITION:

In adopting and promulgating Section 3.02 (Non-degradation statement) and the other sections of these Regulations, it was and continues to be the intent of this Board (State Water Resources Board) to devise and promulgate criteria that, in order to be met, would require the highest and best practicable means of waste treatment. This requirement is interpreted by the Board to necessitate as an absolute minimum, secondary treatment of municipal wastes and the equivalent of secondary treatment of all industrial wastes.

DEFINITION:

No specific definition incorporated into the standards.

WISCONSIN

REQUIREMENT:

"Adequate treatment" in the Wisconsin Water Quality Standards and the Implementation and Enforcement Plans report means accomplishing secondary treatment for treatable biodegradable water and an equivalent high degree of treatment of all other wastes or better.

DEFINITION:

No specific definition incorporated into the standards.

WYOMING

REQUIREMENT:

It is the policy of the Board that wastes amenable to treatment or control will receive, prior to discharge into any interstate waters, the best practical treatment or control unless it can be demonstrated that a lesser degree of treatment or control will provide for water quality commensurate with present and future water uses.

DEFINITION:

None.

DISTRICT OF COLUMBIA

REQUIREMENT & DEFINITION:

> . . . it is the policy of the District of Columbia to improve the quality of all its waters as reflected in the standards. All industrial, public, and private sources of pollution will be required to provide the degree of waste treatment necessary to meet the water quality standards.

GUAM

REQUIREMENT:

All sewage and all wastes prior to discharge will receive the best practicable treatment or control unless it can be demonstrated that a lesser degree of treatment or control will provide water quality commensurate with the uses of the waters of the territory . . .

DEFINITION:

Best practicable treatment is defined herein as not less than that degree of treatment for municipal or industrial wastes commonly recognized in sanitary engineering practice as "secondary treatment" or its industrial waste treatment equivalent or whatever other degree of treatment or control is found necessary to provide the water quality required to protect the classified uses of the receiving water.

PUERTO RICO

REQUIREMENT:

It is hereby prohibited to any person, to directly or indirectly throw, discharge, pour, or dump and/or cause or allow to be thrown, discharged, poured or dumped into the coastal waters of Puerto Rico any kind of domestic or industrial wastes with less than conventional secondary treatment or control or its equivalent, or any other substances capable of polluting or creating a potential threat of pollution in such a way that coastal waters be rendered below the minimum standards of purity established in these Rules and Regulations.

DEFINITION:

None.

VIRGIN ISLANDS

REQUIEMENT:

(No secondary treatment requirement listed in the standards.)

None of the sewered cities with harbors in the Virgin Islands now provide sewage treatment. Primary treatment with chlorination of effluent before discharge through outfalls equipped with diffusers to give a minimum of 300 to 1 dillution will be required to protect water quality for marine life and recreational uses.

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